

REMARKS

Reconsideration and allowance in view of the foregoing amendments and the following remarks are respectfully requested.

Claims 1-15, 24, and 31-33 remain pending in the present application.

Applicant notes that the present application is a Divisional application from US application no. 09/883,035, now US patent No. 6,224,724 ("the '724 patent"). Applicant also notes that independent claims 1, 8, and 24 in the present application are generally similar to granted independent claim 1 in the '724 patent. For example, claim 1 of the '724 patent is an apparatus claim directed to a pressure support system having an impeller, while independent claim 1 of the present application is directed to the impeller only but otherwise includes the same details regarding the impeller as claim 1 of the '724 patent. Independent claim 8 of the present application is an apparatus claim directed to the pressure generator portion only (not the entire pressure support system) but is otherwise similar to independent claim 1. Independent claim 24 is a method claim that corresponds to apparatus claim 1 of the '724 patent. Finally, independent claim 31 of the present application is generally similar to granted independent claim 9 from the '724 patent.

The Examiner should be aware that a previous Office Action was issued in the present application on January 28, 2008. In this Office Action, the presently pending claims were rejected based only on '724 patent as obviousness-type double patenting of the claims in the '724 patent. To which, the applicant filed a Terminal Disclaimer. The presently pending claims have changed relatively little from the issuance of the January 28, 2008 Office and now; yet the US Patent and Trademark Office as apparently made another review of the presently pending claims and has issued rejections against all of the claims. It is troublesome as to why this rejection was not made in the January 28, 2008 Office Action despite the fact that this application has been awaiting examination for over 6 years and, moreover, how this rejection can be made despite the similarities between the present pending claims and those granted in the '724 patent.

Claims 1-5, 7-15, and 24 stand rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 4,602,653 to Ruiz-Vela et al. ("the '653 patent") in view of U.S. Patent No. 5,152,661 to Sheets ("the '661 patent"). In additions, claim 6 stands rejected under 35 U.S.C. § 103 as being unpatentable over the '653 patent in view of the '661 patent in further view of U.S. Patent No. 5,695,318 to Harmen ("the '318 patent"). Finally, claims 31-33 stand rejected under 35 U.S.C. § 103 as being unpatentable over the '653 patent in view of the '661 patent in further view of U.S. patent No. 5,065,756 to Rapoport ("the '756 patent"). Applicant respectfully traverses these rejections for the reasons presented below.

Independent claim 1 recites a radial impeller, an example of which is shown in FIG. 2 from the present application, which is reproduced below for the Examiner's convenience. The reference numerals used below in the discussion of claim 1 are also provided for the Examiner's convenience in understanding the present invention. It should be noted that claim 1 is not intended to be limited to the specific impeller shown in FIG. 2.

The impeller of the present invention includes a plurality of impeller blades (48) disposed on one face of the impeller body. Each impeller blade (48) extends from a leading end (50) of the blade generally adjacent a hub (42) toward a trailing end (52) of the blade generally at the perimeter of the impeller. An inlet area (54) is defined between each pair of adjacent blades generally adjacent the hub. The inlet area is defined as the area at the radius of the leading end of the adjacent blades bounded by a height of the leading end of the adjacent blades and the one face of the impeller body. This inlet area is shown by the shaded area (54) in FIG. 2.

An outlet area 56 is defined between each pair of adjacent blades generally adjacent the perimeter of the impeller. This outlet area being defined as the area at the radius of the trailing end of the adjacent blades bounded by the height of the trailing end of the adjacent blades and the one face of the impeller body. This outlet area is shown by the shaded area (56) in FIG. 2. Claim 1 further recites that each inlet area (54) is substantially equal to each corresponding outlet area (56) for each pair of adjacent blades. Applicant respectfully submits that the cited references do not teach or suggest an impeller having these features.

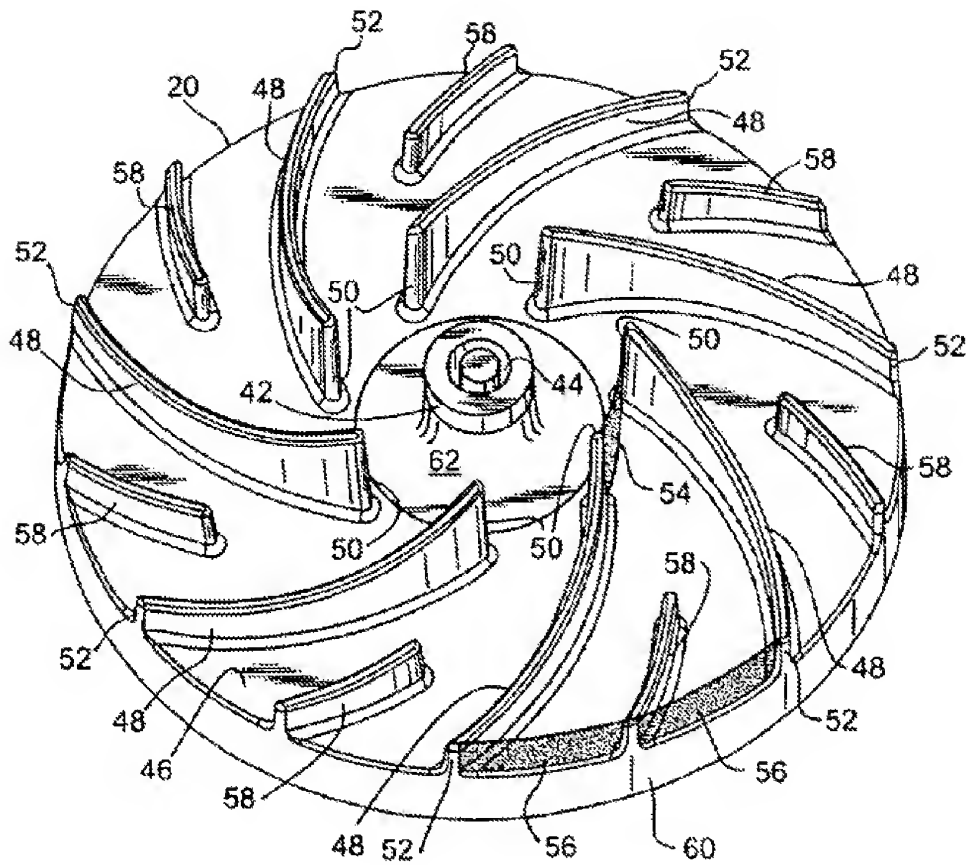
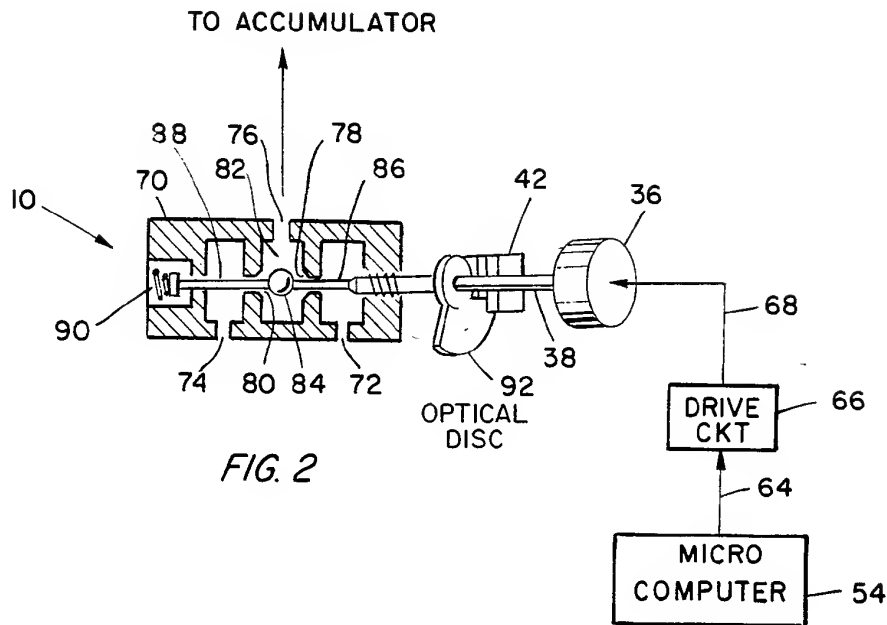


FIG. 2

The Examiner relies on the ‘653 patent as teaching a radial impeller citing Fig. 2 item 92, which is reproduced below for the Examiner’s convenience. The Examiner correctly notes that optical disc 92 taught by the ‘653 patent does not include a plurality of impeller blades. For this, the Examiner cites the ‘661 patent. Applicant respectfully disagrees that this combination can be made.



Applicant submits that one of ordinary skill in the art would not be motivated to combine the impeller blade teachings of the '661 patent with the optical disc 92 of the '653 patent because optical disc 92 is not used for gas flow generation purposes. Optical disc 92 is used in the '653 patent as a mechanism for blocking light. According to the '653 patent, "[a] position indicator 40 carried on the drive shaft takes the form of a radially-extending, optically-opaque blade 92, as shown in FIGS. 2 and 3." See column 9, lines 3-5, of the '653 patent. The '653 patent further explains that,

"two light source/photodetector pairs 94a/96a, 94b/96b are located on opposite sides of the drive shaft 38, with the blade 92 positioned so that at a first rotational reference position, it blocks the light beam from the source 94a, and at a second rotational reference position, it blocks the beam from the source 94b. Thus, the signals from the photodetectors 96a and 96b will indicate the arrival of the blade 92 at either of the rotational reference positions."

See column 9, lines 23-31, of the '653 patent. It can thus be appreciated that disc 92 is used to indicate a relative rotational position of drive shaft 38 and is not used to generate a flow of gas.

Those of ordinary skill in the art understand that impeller blades, such as blades (48) from FIG. 2 of the present application as well as those discussed in detail in the '661 patent,

are used to generate a flow of gas. Thus, there would be no reason whatsoever for one of ordinary skill in the art to add impeller blades from the '661 patent to disc 92 of the '653 patent.

Even if impeller blades are added to disc 92, based on the teachings of the '661 patent, which applicant does not admit is possible, the resulting combination still does not provide all of the limitations recited in independent claim 1. Claim 1, for example, recites that that each impeller blade extends from a leading end of the blade generally adjacent the hub toward a trailing end of the blade generally at the perimeter of the impeller. The '661 does not disclose a radial impeller, thus it is not clear how the impeller blades would be situated on disc 92. Independent claim 1 has also been amended to clarify that the impeller blades decrease in height from the leading end to the trailing end. The '661 does not appear to teach or suggest varying the height of the blades over their length.

Independent claims 8 and 24 include a description of an impeller that corresponds to that recited in independent claim 1. Accordingly, the distinctions noted above with respect to the cited references and independent claim 1 are equally applicable to independent claims 8 and 24.

Independent claim 31 recites a method of supplying gas that includes providing a pressure generator comprising a motor, a rotatable drive shaft driven by the motor, and an impeller mounted on the drive shaft. The pressure generator pressurizes gas from a source of breathing gas such that the pressure generator outputs a substantially constant pressure over a range of flows from 10-150 l/min. In addition, the pressure generator delivers the substantially constant pressure, which is a pressure selected from a range of pressures between 10-65 cmH₂O. Applicant respectfully submits that the cited references do not teach or suggest a method of supplying gas having these features.

The Examiner cites the '756 patent for the proposition that it is known to provide a flow of gas over certain pressure ranges. While this may be true, the '756 patent does not teach or suggest a pressure generator that can provide a substantially constant pressure (ranging from 10-65 cmH₂O) over a range of flows from 10-150 l/min. A conventional pressure generator

(blower) will not produce a constant pressure over this range of flows. This is illustrated in the present application in FIG. 8 which is reproduced below for the Examiner's convenience.

Referring to FIG. 8 below, lines 68 and 70 show the pressure/flow curves for a conventional blower, and line 66 corresponds to the pressure/flow curve for the blower of the present invention. The Examiner's cursory conclusion - that because it is known to provide a flow of gas over certain pressure ranges, the results recited in independent claim 31 can be achieved - fails to understand and appreciate the pressure/flow characteristics of conventional blowers. When this is properly understood, it can be appreciated that the '756 reference falls far short of teaching a device that can provide a substantially constant pressure (ranging from 10-65 cmH₂O) over a range of flows from 10-150 l/min.

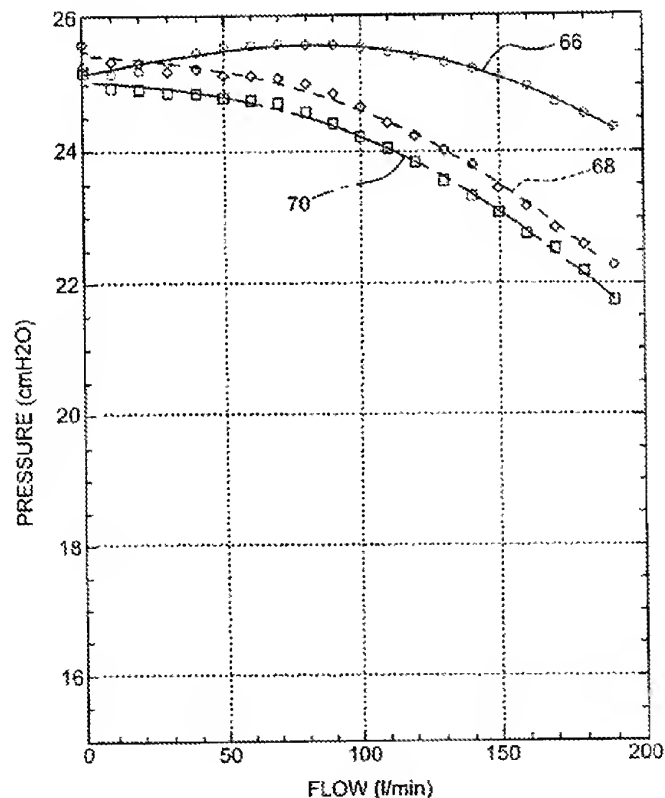


FIG 8

For the reasons presented above, applicant respectfully submits that independent claims 1, 8, 24, and 31 are not anticipated or rendered obvious by the cited references. In addition, claims 2-7, 9-15, and 32-33 are also not rendered obvious due to their dependency from independent claims 1, 8, 24, and 31. Accordingly, applicant respectfully requests that the above rejection of claims 1-15, 24, and 31-33 be withdrawn.

It should be noted that the applicant has not addressed each rejection of the dependent claims. Any rejection of a dependent claim not specifically addressed is not to be construed as an admission by the application of the correctness of that rejection. Rather, the applicant believes that the independent claims are patentably distinguishable over the cited references for the reasons noted above, so that the rejection of the dependent claims need not be addressed at this time. Applicant reserves the right to address the rejection of any dependent claim at a later time should that become warranted.

This response is being filed within the three-month statutory response period which expires on September 29, 2009. In addition, no additional claim fees are believed to be required as a result of the above amendments to the claims. Nevertheless, the Commission is authorized to charge any fee required under 37 C.F.R. §§ 1.16 or 1.17 to deposit account no. 14-1270.

All objections and rejections have been addressed. It is respectfully submitted that the present application is in condition for allowance and a Notice to the effect is earnestly solicited.

Respectfully submitted,

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Note: The Commissioner is authorized to charge any fee required under 37 C.F.R. §§ 1.16 or 1.17 to deposit account no. 14-1270.